

Measure It Out

Estimate and measure length, liquid volume and mass.

GRADE 3 • 3.MDR.5.5

3.MDR.5.5 "Estimate and measure liquid volumes, lengths and masses of objects using customary units. Solve problems involving mass, length, and volume given in the same unit, and reason about the relative sizes of measurement units within the customary system."

NAME _____

DATE _____

Use the supplied tools for tasks 1-3. Write estimates BEFORE measuring. You may explain reasoning aloud after recording your measurements.

Materials and setup

A book, inch ruler, measuring jug marked in cups, teacher-prepared water container, scale marked in ounces, and a bag of blocks.

Use the right tool

Estimate before you measure. Use a ruler for length, a measuring cup for liquid volume and a scale for mass. Record the unit with each number.

Try it together

A student estimates a container has 2 cups of water. The student pours the water into a measuring jug and reads the cup marks at eye level.

Water record

Record	Cups
Estimate	2
Measurement	3

The measurement is 3 cups. The estimate was 1 cup less than the measurement. A measurement uses a tool; an estimate is a careful guess.

1. Measure length

Estimate the length of the bottom edge of your book in inches. Write the estimate first. Measure from the ruler zero mark to the far end, to the nearest whole inch. Record your measurement.

Book edge

Record	Inches
Estimate	
Measurement	

2. Measure liquid volume

Estimate the amount of water in the teacher-prepared container, in cups. Write the estimate first. Pour it into the measuring jug. Read the cup marks at eye level, to the nearest whole cup.

Water

Record	Cups
Estimate	
Measurement	

3. Measure mass

Estimate the mass of the bag of blocks in ounces. Write the estimate first. Check that the empty scale reads zero. Weigh the bag with its blocks and record the nearest whole ounce.

Bag and blocks

Record	Ounces
Estimate	
Measurement	

4. Compare unit sizes

Use these facts: 1 foot = 12 inches; 1 pint = 2 cups; 1 pound = 16 ounces. Circle the larger unit in each pair: foot or inch; pint or cup; pound or ounce.

5. Ribbon for a sign

A ribbon is 18 inches long. You cut off 7 inches for a sign. How much ribbon remains? Show a calculation and write the unit.

6. Pack classroom supplies

One bag has a mass of 9 ounces; another has a mass of 6 ounces. Find their total mass. Separately, a jug contains 8 cups of water and you pour out 3 cups. How much water remains?

7. Same length, different units

A student says: If I measure this same desk edge in inches instead of feet, the desk gets longer. Explain what changes and what stays the same.

Teacher notes

Prepare a container holding 1-4 cups of water and a bag of blocks of about 8-24 ounces. Supply a measuring jug with clear cup marks, a scale marked in ounces, and an inch ruler. Distinguish mass ounces from fluid ounces. Check estimates before measurement and accept ordinary tool accuracy. All physical tasks use real objects, so PDF scaling does not change the measurements.

Task 1

Answers vary. Confirm the chosen book edge, the estimate before measuring, and alignment with zero. Accept careful rounding to whole inches.

Task 2

Answers vary. Confirm an estimate first, a cup reading at eye level and appropriate whole-cup rounding. Use the amount of water, not the full container capacity.

Task 3

Answers vary with the bag. Confirm the empty scale reads zero and the reading uses ounces of mass, not fluid ounces. The bag is included in the measured mass.

Task 4

Foot, pint and pound are the larger units.

Task 5

$18 - 7 = 11$ inches remain.

Check each calculation and unit.

Task 6

$9 + 6 = 15$ ounces. $8 - 3 = 5$ cups remain.

Check each calculation and unit.

Task 7

The desk edge stays the same length. The number is larger when measuring in inches because an inch is a smaller unit; more inches are needed than feet.